DETAILED ACTION

Election/Restrictions

The election/restriction requirement with regards to the restriction between the composition of claims 1-11, 16-18 and 20-26, the method of claim 19 and the method of claims 12-15 is maintained for reasons of record.

Claims 12-15 and 18 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicants timely traversed the restriction (election) requirement in the reply filed on 05/30/2006.

Any rejection found in the previous Office Action and not repeated herein has been withdrawn based upon Applicants' amendments to the claims.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-11, 16-18 and 20-26 are currently under examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-11, 16-18 and 20-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, Applicant claims, "wherein the composition is essentially free of an extract from Emblica officinalis", thereby introducing the new claim language "essentially free of an extract from Emblica officinalis", which is considered to be new matter. Insertion of the above mentioned claim limitation has no support in the as-filed specification. The insertion of the limitation is a new concept because it neither has literal support in the as-filed specification by way of generic disclosure, nor are there specific examples of the newly limited claim language "wherein the composition is essentially free of an extract from Emblica officinalis". This is a matter of written description, not a question of what one of skill in the art would or would not have known.

The material within the four corners of the as-filed specification must lead to the generic concept. If it does not, the material is new matter. Declarations and new references cannot demonstrate the possession of a concept after the fact. Thus, the insertion of the above mentioned claim-limitation is considered to be the insertion of new matter for the above reasons.

As the above- mentioned claim limitation could not be found in the present specification, the recitation of the claim limitation is deemed new matter; and, therefore

it must be omitted from the claim language, unless Applicant can particularly point to the specification for literal support.

Claims 1-11, 16-18 and 20-26 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regards as the invention.

The metes and bounds of claims 1 and 2 are rendered uncertain by the phrase "the saponins present in the extract calculated as hederagenin" because it is unclear if Applicants are claiming that the amount of saponins present is calculated in relation to the amount of hederagenin or that the amount of saponins present contains the claimed percentages of hederagenin. Are Applicants claiming that the amount of hederagenin in the extract is present in the amounts claimed or if the total amount of saponins present in the extract are present in the amounts claimed? The lack of clarity renders the claims indefinite since the resulting claims do not clearly set forth the metes and bounds of the patent protection desired.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-11, 16-18 and 20-26 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gupta (N*).

Gupta teaches a composition for treating migraines via nasal administration in the form of nasal drops comprising an aqueous extract of *Sapindus trifoliatus* in an amount of 0.001-1%, which contains saponins, in combination with pharmaceutically acceptable additives (See abstract and page 25). Gupta further teaches that the composition comprising an aqueous extract of *Sapindus trifoliatus* further comprises an extract of *Emblica officinalis* and that the extract of *Emblica officinalis* is present in an amount ranging from 0.001-1% and in the specific examples, it is present in an amount ranging from 0.15-1% (which reads on essentially free of an extract of *Emblica officinalis* because the extract of *Emblica officinalis* is present in such low concentrations and is based upon the broadest reasonable interpretation of the language "essentially free'). Gupta further teaches that the composition further comprises sodium chloride (which reads on agent for adjusting tonicity). Gupta further teaches that the pH of the composition is 4.5 to 5% (See page 26, line 15). Gupta further teaches that the composition comprises xanthan gum, citric acid, parabesn

Although Gupta does not teach that the composition is an anticonvulsant, or that the composition has the effects claimed in claims 16-18 and 20-26, the claimed functional properties are inherent to the preparation taught by Gupta because the ingredients, the amounts of the ingredients, and the route of administration for the delivery of the ingredients taught by Gupta are one and the same as disclosed in the

instantly claimed invention of Applicant. Thus, being an anticonvulsant and having a binding affinity for certain receptors is inherent to the composition taught by Gupta.

Although Gupta does not expressly teach that the saponins present in an aqueous extract of Sapindus trifoliatus are calculated as hederagenin from 0.001 to 1.0% w/v or in an amount from 0.004% to 0.08% w/v, the claimed functional properties are inherent to the preparation taught by Gupta, the functional properties are inherent to the preparation taught by Gupta because the ingredients are one and the same as disclosed in the instantly claimed invention of Applicant. Thus saponins present in an aqueous extract of Sapindus trifoliatus are calculated as hederagenin from 0.001 to 1.0% w/v or in an amount from 0.004% to 0.08% w/v is inherent to the composition taught by Gupta. Therefore, the reference anticipates the claimed subject matter.

With respect to the USC 102/103 rejection above, please note that the Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether Applicant's claimed aqueous extract of Sapindus trifoliatus is different and, if so, to what extent, from that of the discussed reference. Therefore, with the showing of the reference, the burden of establishing non-obviousness by objective evidence is shifted to the Applicants.

Claims 1-5, 16-18 and 20-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bhargava (X, "Antifertility Effects of Sapindus trifoliatus L. Fruit Extract in Rats". Int. J. Crude Drug Res., Vol 26, No. 4 (1988) 229-233).

Bhargava teaches an extract of dried fruit pulp of *Sapindus trifoliata*, wherein the fruit pulp is extracted with 50% aqueous ethanol (which reads on aqueous, alcoholic and hydroalcoholic extracts), concentrated and fractioned into benzene and water soluble fractions. Bhargava further teaches that the water soluble fraction (which reads on aqueous solution) was then fractionated with butanol to provide a butanol subfraction (butanol reads on a pharmaceutically acceptable additive).

Although Bhargava does not teach that the composition is an anticonvulsant, or that the composition has the effects claimed in claims 21-26, the claimed functional properties are inherent to the preparation taught by Bhargava because the ingredients taught by Bhargava are one and the same as disclosed in the instantly claimed invention of Applicant. Thus, being an anticonvulsant and having a binding affinity for certain receptors is inherent to the composition taught by Bhargava.

Although Bhargava does not expressly teach that the saponins present in an aqueous extract of Sapindus trifoliatus are calculated as hederagenin from 0.001 to 1.0% w/v or in an amount from 0.004% to 0.08% w/v, the claimed functional properties are inherent to the preparation taught by Bhargava, the functional properties are inherent to the preparation taught by Bhargava because the ingredients are one and the same as disclosed in the instantly claimed invention of Applicant. Thus saponins present in an aqueous extract of *Sapindus trifoliatus* are calculated as hederagenin from 0.001 to 1.0% w/v or in an amount from 0.004% to 0.08% w/v is inherent to the composition taught by Bhargava. Therefore, the reference anticipates the claimed subject matter.

With respect to the USC 102/103 rejection above, please note that the Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether Applicant's claimed aqueous extract of *Sapindus trifoliatus* is different and, if so, to what extent, from that of the discussed reference. Therefore, with the showing of the reference, the burden of establishing non-obviousness by objective evidence is shifted to the Applicants.

Claim Rejections - 35 USC § 103

Claims 1-5, 16-18 and 20-26 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Kiso et al. (O*, JP 06-345650 A, Translation provided in the previous Office action), in view of Gedeon (W*).

Kiso teaches a composition for treating osteoporosis comprising hederagenin, wherein hederagenin is extracted from *Sapindaceae*, wherein the species of *Sapindaceae* is *Sapindus mukurossi* (See paragraph 0015) and that the hederagenin can also be used combining various hederagenin compounds as an active principle, although it may used independently (See paragraph 0017). Kiso further teaches that the composition can be administered intranasally (See paragraph 0018). Kiso further teaches that carriers for drugs may be added (See paragraph 0018) and that the amount of hederagenin preferred is about 0.01 to 1 % of the weight (See paragraph 0020). Kiso further teaches a composition comprising hederagenin further comprises citrate (which is a base of citric acid or can be a citric acid derivative) (See paragraphs

0046 and 0048), potassium chloride, magnesium sulfate, sodium tartarate, and succinic acid (See paragraph 0047).

It is noted that the reference does not teach that the composition can be used as an anticonvulsant. However, the intended use of the claimed composition does not patentably distinguish the composition, *per se*, since such undisclosed use is inherent in the reference composition. In order to be limiting, the intended use must create a structural difference between the claimed composition and the prior art composition. In the instant case, the intended use does not create a structural difference, thus the intended use is not limiting.

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See also MPEP § 2112.01 with regard to inherency and product-by-process claims.

Although Kiso does not expressly teach that the composition comprising hederagenin has the functional effects as claimed by Applicants with regards to anticonvulsant properties of claims 1, 4, 16-18 and 20-26, the claimed functional properties are intrinsic to the preparation taught by Kiso because the ingredients, the amounts of the ingredients, and the route of administration for the delivery of the

ingredients taught by Kiso are one and the same as disclosed in the instantly claimed invention of Applicants. Thus, the anticonvulsant properties claimed by Applicants are intrinsic to the composition taught by Kiso.

Gedeon teaches that soapnuts, wherein the soapnuts are *Sapindus mukorossi* or *Sapindus laurifolius* (which is synonymous with *Sapindus trifoliatus*), are extracted with water to provide an aqueous soapnut composition comprising hederagenin (See page 427).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the composition taught by Kiso by employing *Sapindus laurifolius* (*Sapindus trifoliatus*) as the source of hederagenin based upon the teachings of Gedeon. It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the hederagenin containing composition, wherein the hederagenin can be obtained from *Sapindaceae* for nasal administration as taught by Kiso by employing an aqueous extract of *Sapindus trifoliatus* as taught by Gedeon because at the time the invention was made, it was known that a composition comprising hederagenin could be nasally administered. It was also known that the source of hederagenin to be nasally administered could be obtained from *Sapindaceae* as taught by Kiso and it was known that *Sapindus trifoliatus* is a good source of hederagenin as taught by Gedeon.

From the teachings of the references, it is apparent that one of ordinary skill in the art one would have been motivated to modify the composition for nasal administration comprising hederagenin taught by Kiso by employing *Sapindus laurifolius*

as the source of hederagenin based upon the teachings of Gedeon. Thus, the composition for nasal administration comprising hederagenin as taught by Kiso modified by the teachings of Gedeon would have been expected to provide an equally effective composition comprising hederagenin because both *Sapindus mukorossi* and *Sapindus trifoliatus* were both known to be good sources of hederagenin.

One of ordinary skill in the art would have had a reasonable expectation of success to modify the composition for nasal administration comprising hederagenin taught by Kiso by employing *Sapindus trifoliatus* as the source of hederagenin, as taught by Gedeon. One of ordinary skill in the art would have had a reasonable expectation of success to provide a beneficial composition by employing *Sapindus trifoliatus* as the source of hederagenin for the expected benefit of providing a composition comprising hederagenin for nasal admnistraion because at the time the invention was made, it was known that *Sapindus trifoliatus* was a good source hederagenin.

Moreover, it would have been well in the purview of one of ordinary skill in the art practicing the invention to pick and choose the instantly claimed concentration of hederagenin because at the time the invention was made, it was known in the art that hederagenin could be administered nasally, wherein the hederagenin present in the composition falls within the range claimed by Applicants. Thus, the claimed invention is no more than the routine optimization of a result effect variable.

Based upon the beneficial teachings of the cited references, the skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a

reasonable expectation of success to result in the claimed invention.

Accordingly, the claimed invention was prima facie obvious to one of ordinary skill in the art at the time the invention was made, especially in the absence of evidence to the contrary.

Claims 1-11, 16-18 and 20-26 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Kiso et al. (O*), in view of Gedeon (W*), Stern (P*) and Kagatani et al. (A*).

The teachings of Kiso and Gedeon are set forth above and applied as before.

Stern teaches a composition for nasal administration for treating osteoporosis comprising an aqueous liquid nasal carrier, parabens, citric acid, sodium chloride, Tween 80, benzyl alcohol and phenylethyl acohol, wherein the pH of the composition is between 3-5. Stern further teaches that the nasal composition may be formulated and contained in a suitable applicator for application to the nasal cavity, wherein the applicator may be used to administer the composition in the form of a spray to the nasal cavity.

Kagatani teaches a composition for treating osteoporosis for nasal administration comprising methyl cellulose.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the composition for treating osteoporosis taught by Kiso by employing *Sapindus laurifolius* as the source of hederagenin based upon the teachings of Gedeon and by adding parabens, citric acid, sodium chloride, and methyl

cellulose to the composition based upon the teachings of Stern and Katagani. It would have also been obvious to one of ordinary skill in the art at the time the invention was made to modify the pH of a hederagenin-containing composition for treating osteoporosis by nasal administration based upon the teachings of Stern. It would have been obvious to modify the composition taught by Kiso by employing the teachings of Gedeon, Stern and Katagani because at the time the invention was made, it was known that a composition comprising hederagenin could be nasally administered for treating osteoporosis and that the source of hederagenin to be nasally administered could be obtained from *Sapindaceae* as taught by Kiso and that *Sapindus trifoliatus* is a good source of hederagenin as taught by Gedeon. It was also known that parabens, citric acid, sodium chloride, and methyl cellulose were useful ingredients in compositions for nasal administration for treatment of osteoporosis as taught by Stern and Katagani and that the pH of a composition for nasal administration should fall within the range claimed by Applicants. It would have also been obvious to one of ordinary skill in the art at the time the invention was made to modify the composition taught by taught by Kiso by employing the teachings of Gedeon, Stern and Katagani for the following reasons:

It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980); *In re Crockett*, 279 F.2d 274, 126 USPQ 186 (CCPA 1960); and *Ex parte Quadranti*, 25 USPQ2d 1071 (Bd. Pat. App. & Inter. 1992).

As the court explained in Crockett, the idea of combining them flows logically from their having been individually taught in prior art. Therefore, since Kiso teaches a composition comprising hederagenin, wherein the hederagenin is obtained from *Sapindaceae*, Gedeon teaches that *Sapindus laurifolius* is a good source of hederagenin, and that Stern and Katagani teach that parabens, citric acid, sodium chloride, and methyl cellulose are useful ingredients in compositions for treating osteoporosis, wherein the composition may be administered nasally to the composition, it would have been obvious to combine these ingredients to provide Applicants' instantly claimed invention because the ingredients claimed by Applicants were known to be useful for the same purpose of treating osteoporosis by nasal administration. Thus, combining them flows logically from their having been individually taught in prior art.

From the teachings of the references, it is apparent that one of ordinary skill in the art one would have been motivated to modify the composition for treating osteoporosis comprising hederagenin for nasal administration taught by Kiso by employing *Sapindus laurifolius* as the source of hederagenin based upon the teachings of Gedeon and by adding parabens, citric acid, sodium chloride, and methyl cellulose to the composition based upon the teachings of Stern and Katagani. One of ordinary skill in the art at the time the invention was made would have also been motivated to modify the pH of a hederagenin-containing composition for nasal administration based upon the teachings of Stern. Thus, the composition for treating osteoporosis by nasal administration comprising hederagenin as taught by Kiso modified by the teachings of Gedeon, Steam and Katagani would have been expected to be even for effective for

treating osteoporisis because a hederagenin-containing composition, parabens, citric acid, sodium chloride, and methyl cellulose were all known to be useful in compositions that could be nasally administered to treat osteoporosis as taught by Kiso, Stern and Katagani and would have been expected to provide an equally effective composition comprising hederagenin because both *Sapindus mukorossi* and *Sapindus trifoliatus* were both known to be good sources of hederagenin as taught by Gideon.

One of ordinary skill in the art would have had a reasonable expectation of success to utilize the following ingredients, which when combined provide a composition for nasal administration for treating osteoporosis: a composition comprising hederagenin wherein hederagenin is derived from *Sapindus trifoliatus*, as taught by Kiso and Gedeon, and citric acid, sodium chloride, and methyl cellulose, as taught by Stern and Katagani, to provide a beneficial composition for the expected benefit of treating osteoporosis by nasal administration because at the time the invention was made, these ingredients were well known to be useful in compositions for nasal administration and for treating osteoporosis.

Moreover, it would have been well in the purview of one of ordinary skill in the art practicing the invention to pick and choose the instantly claimed concentration of hederagenin and the desired pH for nasal administration because at the time the invention was made, it was known in the art that hederagenin could be administered nasally, wherein the hederagenin present in the composition falls within the range claimed by Applicants, and it was known that the pH of a composition for nasal administration falls within the range claimed by Applicants. Thus, the claimed invention

is no more than the routine optimization of a result effect variable.

Based upon the beneficial teachings of the cited references, the skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

Accordingly, the claimed invention was prima facie obvious to one of ordinary skill in the art at the time the invention was made, especially in the absence of evidence to the contrary.

Response to Arguments

Applicant's arguments concerning the 35 U.S.C. § 112, second paragraph rejection above have been thoroughly considered but are not deemed persuasive of error in the rejection.

Applicant argues that the disclosure explains the amount of saponins present as expressed as hederagenin and that the extract contains a specific range of concentration of a mixture of triterpenoid saponins in the extract. However, this is not found persuasive because limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's arguments concerning the 35 U.S.C. § 103 rejections above have been thoroughly considered but are not deemed persuasive of error in the rejection.

Applicant argues that the invention resides in a composition which is an anticonvulsant comprised of an extract from Sapindus trifoliatus, wherein the saponins from the extract are expressed in terms of hederagenin and not that hederagenin is present in the composition in these amounts. Applicant further argues that Kiso does not teach that the composition can be used as an anticonvulsant or the limitations of claim 1. Applicant further argues that Gedeon does not cure the deficiencies of Kiso because what is applicable to Sapindus mukurossi cannot be applicable to Sapindus trifoliatus. Applicant further argues that Kiso teaches that the composition is useful for treating osteoperosis but does not teach an anticonvulsant and there is not teaching that the saponin from Sapindus trifoliatus can be used in an amount as taught in claim 1 for a totally new anticonvulsant composition. Applicant further argues that Gedeon teaches the isolation of crude saponins resulting in the isolation of hederagenin but does not provide the structures of the saponins present. Applicant further argues that Stern and Kagatani do not teach using a composition as an anticonvulsant pharmaceutical.

However, this is not found persuasive because the way the claims are currently written, it appears that Applicant is claiming that the saponins in the extract are hederagenin or are related to hederagenin in some way. Further, Applicant is claiming a pharmaceutical composition. Please note that the intended use of the claimed composition does not patentably distinguish the composition, *per se*, since such undisclosed use is inherent in the reference composition. In order to be limiting, the intended use must create a structural difference between the claimed composition and

the prior art composition. In the instant case, the intended use does not create a structural difference, thus the intended use is not limiting. "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See also MPEP § 2112.01 with regard to inherency and product-by-process claims.

Kiso teaches a composition comprising hederagenin, which can be nasally administered. Since the composition contains hederagenin, as claimed by Applicant, and that the composition can be administered in the same manner as instantly claimed, it is expected that the composition taught by Kiso would intrinsically have the same characteristics with regards to activity as that claimed by Applicant. Hederagenin is a specific compound with a specific chemical compound that is defined and well known in the art. Therefore, hederagenin obtained from one species of Sapindus would be expected to be identical to hederagenin obtained from any other source (either synthesized in a lab or obtained from an extract) and, therefore, using an alternative species of Sapindus known to contain hederagenin would be expected to provide the exact same compound, hederagenin, as any other source (such as the specie taught by Gedeon).

With regards to the teachings of the supplemental references of Stern and Kagatani, these reference teach that a nasal spray can contain the ingredients instantly claimed by Applicant and can be used for the same purpose as that taught by Kiso. Therefore, the rejections remain for the reasons of record.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy L. Clark whose telephone number is (571)272-1310. The examiner can normally be reached on Monday to Friday between 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on (571) 272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amy L Clark/
Examiner, Art Unit 1655